



# *Corema*<sup>TM</sup>

Features of Corema Analytics

# Corema Analytics gives the operational and business users

...on the key aspects of your company performance.

From Marketers to Store Managers, from the Finance department to Online, you need to make sense of the data coming in from all of your retail sales and customer contacts. And your data needs to be good: that means consistent, accurate and usable.

Corema Analytics combines Corema Data Warehouse, for enterprise level robustness and data integrity, with Corema Reports, for sophisticated reporting and analysis. Together you have a business-focused solution for maintaining and acting on your corporate data.

## Corema Analytics Architecture

Corema Analytics is built around Windows 2000 and SQL Server 2000 architecture, with Corema Data Warehouse as the main data server and a separate Corema Reports server providing analytics capabilities and optional web distribution.

Data for the analytics environment is extracted from operational systems, via Corema data extraction. It is then transformed, loaded and aggregated, within the Corema Data Warehouse. From here data is available to the Corema Reports server and all appropriate end-users.

## Corema Warehouse

Corema Data Warehouse is made up of multiple components, which together provide a complete data environment for transforming operational data, be it from retail point-of-sale or online commerce sites, into coherent high-value information. Giving you clean data, consistent data definitions, excellent manageability and an extremely flexible infrastructure, Corema Data Warehouse puts you in great shape to investigate what's going on in your business, safe in the knowledge that you're working on data that's 100% reliable. With Corema Data Warehouse, as your company grows and your analysis requirements increase, so can your business intelligence.

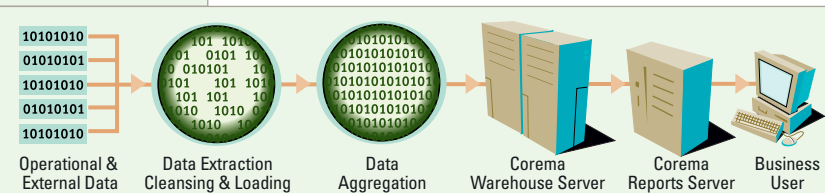
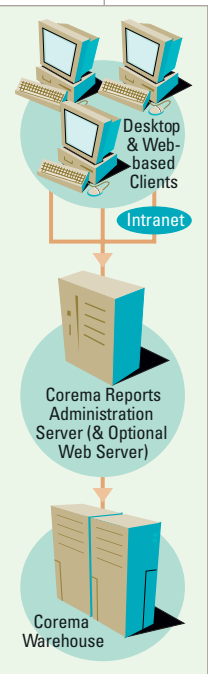
## Data Model

Corema Data Warehouse exists around a multi-dimensional, customer-centric, ROLAP (Relational Online Analytic Processing) model. The model maximizes the opportunity for analyzing customer-buying behavior, by holding customers as unique entities.

This enables comprehensive tracking of customers; between purchasing segments, by product purchases over time, by promotion targeting, and so on. By recognizing the importance of the customer as an individual, the significance of the customer as part of a longer-term buying pattern can be realized. So you can ask and answer the big questions: What are customers looking for? Which promotions are working and for which customers? When are offers being ignored and by whom? Which stores or product lines are performing well, but what is the customer going elsewhere for? Which customers are profitable and which are costing you money?

To support all of this, Corema Data Warehouse models data into business areas such as:

- Customers (members, commercial customers, other identified customers)
- Employees
- Stores (including appropriate store groupings – regions, districts)
- Geography (zip9, zip5, state, country)
- Payment Categories (cash, credit card, check, gift certificates)
- Promotions (using promotions and segments defined by external targeting tools, perhaps Corema Target, to define which customers appear in promotions and segments)
- Merchandise (including UPCs, PLUs and SKUs, plus appropriate groupings - subclass, class, category)
- Time (regular and fiscal, including days, weeks, months, quarters, year-to-date)
- Sales (full line item level information, including purchases, returns, payment types, product, location, time)
- Contacts (catalog requests, including customer identification)
- Store Traffic (as defined by chosen traffic measurement technology)



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# within your company the opportunity to analyze and report...



Each of these dimensions gives a new way to look at your data. In combination they can give previously unnoticed insights. As you can look at product profitability, by customer zip code, for this year versus last year, comparing targeted mailing recipients versus a control group. Or look at customer profitability by payment type, to better understand the real cost of accepting different credit cards.

Because Corema Analytics is geared around a ROLAP architecture, the extension of this model is also much easier than with a multi-dimensional MOLAP solution, since database rebuilds are not necessary. So if you decide you want more customer demographics, or external competitive data, or you decide you want to start analyzing the impact of inventory issues on your good customers, then getting new data into the Corema Data Warehouse is a straightforward incremental process. It's evolution not revolution.

### Data Processes

Management of the Corema Data Warehouse is made easy through simply defined jobsteps, advanced data transformation techniques and extensive administration and logging facilities. These processes include:

- Metadata driven data extraction
- Data integrity and completeness checking
- Management of data record rejects
- Policing and necessary correction of referential integrity
- Surrogate key creation
- Management of slowly changing dimensions
- Index creation and management

- Fact table partitioning for efficient handling of large amounts of base data
- Appropriate de-normalizing of dimensions
- Full logging of job progress
- Defined jobstep interfaces for interfacing with enterprise job schedulers

So you're not worrying about loads failing with bad data, the work required of IS administrators and DBAs is reduced and the end-users get rich information on-time.

### Database Structure

The Corema Data Warehouse is designed around a multi-database architecture, including:

- The primary warehouse reporting database, for all end-user reporting. This can be appropriately located and optimized for read-only access
- A staging database, where all of the data loading and aggregation is performed. This means machine intensive data upload activities all occur in a separate database to that used for reporting. So the uptime of the warehouse database is maximized, with the only offline-time being the brief period of data transfer from staging database to warehouse. This also improves resilience across failures, since the transfer of data from stage to warehouse becomes an atomic action, meaning data consistency is assured
- A separate, reportable, administration database, containing information on load dates, times, durations, data cleansing activities, record rejects, and so on

# Corema Analytics

## Corema Reports

But having good data is not enough; it needs to be accessible. This means having sophisticated analysis techniques and flexible reporting formats. It also means being able to ask questions that are limited by your imagination, not by requirements agreed months earlier.

The Corema Reports solution is designed around the Microstrategy® 7 reporting suite. This provides a highly advanced toolset, with all of the following features:

- Multiple data display modes (grid, graph)
- Extensive export options (Excel, Access)
- Ability to analyze across multiple dimensions (by store, by time, by customer segment)
- Advanced set based processing, to allow construction of complex customer tracking and behavior reports
- Easy creation of data mappings, to simplify the addition of new data and business areas
- Easy change of data mappings, to simplify business redefinitions
- A scalable architecture. Because the vast majority of the processing work is carried out on the main warehouse server, increases in user numbers and workload can be more easily handled by centralized hardware upgrades
- Extensive distribution options, including web and pro-active delivery to email, mobile device, pager
- Advanced management and security options

The flexibility of Corema Reports means that the time taken to change data or to add new business areas, within

the overall analytics environment, is vastly cut down. And if you do want to grow, the reliance on your IS department is also reduced, with much of the definition being within the capabilities of the end user.

To get you started, the Corema Reports solution includes example reports in areas such as:

- Sales details
- Customer movement
- Store performance
- Customer demographics analysis
- Promotion and lift analysis
- Product Sales
- Market Basket Analysis
- Customer Profitability

So you can immediately answer some of your current business questions, like top product sales and comparative store analysis, as well as more advanced and previously impossible topics like customer profitability banding and measuring product purchasing affinities for improved store placement.

*Corema Analytics – transforming data into Business Intelligence.*



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